

Hydrology Demonstrators

Educational Training Equipment for the 21st Century

Bulletin 652-4B

H-6524

Mobile Bed and Flow Visualization Tank Demonstrator



Purpose

The Hampden **Model H-6524** Mobile Bed and Flow Visualization Tank Demonstrator is used to investigate flow visualization and mobile bed situations in relation to Civil Engineering structures. This unit incorporates a sediment well with removable Lexan® cover for mobile bed investigations.

Description

The **Model H-6524** is self-contained consisting of the inlet tank working section, with sand trap, outlet tank with adjustable overshot weir, pump, control panel and model set.

Specifications

Head Tank:

- Code gauge stainless steel 28" (711.2 mm) long by 14" (355.6mm) wide by 37.6" (955mm) deep finished in instrument tan texture
- Tank drain with ball valve
- Stainless steel perforated diffuser plate assembly
- 60 gallon (227 liters) capacity

Flow Channel:

- Code gauge stainless steel 178" (4521mm) long, by 24" (609.4mm) wide, by 13" (330.2mm) deep including sediment bed of 2.5" (63.5mm). External finish is in instrument tan texture.

- Lexan® cover for sediment bed
- Sediment bed drain with ball valve & screen
- Instrument rail set fitted to the top flanges which extend over the complete working section. One rail includes a positioning scale
- Adjustable overshot weir w/ wheel and screw assembly

Reservoir Tanks:

- Heavy duty polyethylene 48" (1219.2mm) long, by 24" (609.4mm) wide, by 24" (609.4mm) deep.
- Tank drain with ball valve
- Approximately 105 gallons (379.5 liters)

Pump:

- Close coupled centrifugal pump, all bronze.
- 2HP squirrel cage induction motor
- 0-124 gal/min (469 L/min)
- One flow transmitter, paddlewheel, with interface cable, connector and $\pm 1\%$ accuracy
- Electric control valve w/ cable & connector
- Priming port
- Pump by-pass with ball valve
- Two interface hoses

Control Panel:

- 14-gauge furniture stock steel case finished in instrument tan texture
- 11-gauge furniture stock steel panel finished in instrument white enamel
- 3-ply white core brown engraving phenolic

secured to the panel w/stainless steel screws

- 8-ft. (2438.4mm) power cord w/ cord rack
- Ground Fault Interrupter 2-pole circuit breaker
- Variable frequency drive
- Digital flow indicator
- Control switch for the electric control valve
- Interface connectors for digital flow indicator, control valve, and variable frequency drive output
- Pilot light
- Flow transmitter power supply

Model Set:

- Piers (2 ea.) cylinders, rectangular, profiled, rounded end
- Aerofoil
- Gate guides - 2
- Baffles - 8
- Tees - 6, 2" (50mm)
- Angles - 6, 1-1/2" (38mm) x 1-1/2" (38mm) x 5" (127mm) long
- Weight
- Float
- Block, retaining
- Bell mouth entry, right and left side
- Wall, 90° angle
- Side wall meanders - 2
- Bend
- Cylinder
- Tank strips

All Hampden units are available for operation at any voltage or frequency

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Accessories:

- Aluminum dust
- Dye crystals
- Multiport dye tube
- Poly-tube
- Instrument carrier with traverse, scale, and locking device
- Vernier scale with stainless steel J-hook and point

Components Not Supplied:

- Medium, granular material
- Stop watch
- Balance scale
- Grading sieves

Dimensions and Weights:

Length:	230" (5842mm)
Width:	34" (863.6mm)
Height:	50" (1270mm)
Weight:	1200 lbs (545kg)
Cu.ft.:	226.3 (6.4m ³)

Experiment Capabilities

- Flow bed visualization
- Erosion and deposition
- Velocity distribution in duct flow
- Flow around models
- Meandering water courses
- Model testing
- Mobile bed models
- Boundary layer suction demonstration

Services Required

Electrical:

- 220V AC 60Hz, single-phase

Water:

- Supply (fill tank)
- Waste Drain

H-6524-2

This model is also available with the following varied specifications. Please request Hampden Model H-6524-2.

Specifications

Working Section:

- Code gauge stainless steel 96" (2439mm) long
- The working section is 78" (1982mm) long,

Dimensions and Weights:

Length:	134" (3404mm)
Weight:	750 lbs (340kg)
Cu.ft.:	119 (3.3733m)

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